Amendments to the Claims:

This listing of claims replaces all prior versions, and listings, of the claims in the applications.

Listing of Claims

[0022] 1. (Currently amended) A micro-valve, comprising:

a fluid guiding structure containing a fluid inlet port and a fluid outlet port;

a fluid communication channel, formed within ~~said~~ the fluid guiding structure,

fluidically coupling ~~said~~ the fluid inlet port to ~~said~~ the fluid outlet port;

an intermediary port, formed within ~~said~~ the fluid communication channel, ~~said~~ the fluid inlet port being fluidically coupled to ~~said~~ the fluid outlet port valve through ~~said~~ the intermediary port;

a cantilever element, moveably positioned proximate to ~~said~~ the intermediary port within ~~said~~ the fluid communication channel;

an energy conversion body defining a chamber enclosing a working fluid, ~~said~~ the energy conversion body being at least partially formed of a semiconductor material, ~~said~~ the energy conversion body including a flexible membrane mechanically coupled to ~~said~~ the cantilever element through a first pedestal; and

a ~~stiffening~~ means for stiffening positioned on ~~said~~ the flexible membrane ~~proximate to said~~ between the first pedestal and ~~said~~ the fluid inlet port such that means for stiffening prevents the flexible membrane from contacting the cantilever.

[0023] (Original) 2. The micro-valve of claim 1 wherein said cantilever element includes a set of beams operative as a restoring force during deflection of said valve element by said flexible membrane.

[0024] (Original) 3. The micro-valve of claim 1 wherein said flexible membrane is single crystal silicon between 15 and 100 microns thick.

[0025] (Currently amended) 4. The micro-valve of claim 1 wherein said ~~stiffening~~ means for stiffening is one or more pedestals.

[0026] (Currently amended) 5. The micro-valve of claim 1 wherein said ~~stiffening~~ means for stiffening is one or more regions of increased thickness of said flexible membrane.

[0027] (Currently amended) 6. A micro-valve, comprising:

~~an actuation~~ a means for actuation attached to a flexible membrane;

at least one pedestal;

a cantilever element; and

a means for stiffening the flexible membrane; wherein ~~said~~ the flexible membrane is attached to ~~a~~ the cantilever element through the at least one pedestal; ~~said~~ the cantilever element ~~normally~~ is normally closed over an inlet port; ~~said~~ the inlet port is in fluid communication with at least one outlet port; and ~~a~~ the ~~stiffening~~ means for stiffening is positioned on said flexible membrane ~~proximate to said~~ between the at least one pedestal and ~~said~~ the fluid inlet port such that means for stiffening prevents the flexible membrane from contacting the cantilever.

[0028] (Original) 7. The micro-valve of claim 6 wherein said cantilever element includes a set of beams operative as a restoring force during deflection of said valve element by said

flexible membrane.

[0029] (Original) 8. The micro-valve of claim 6 wherein said flexible membrane is single crystal silicon between 15 and 100 microns thick..

[0030] (Currently amended) 9. The micro-valve of claim 6 wherein said ~~stiffening~~ means for stiffening ~~is~~ comprises one or more pedestals.

[0031] (Currently amended) 10. The micro-valve of claim 6 wherein said ~~stiffening~~ means for stiffening ~~is~~ comprises one or more regions of increased thickness of said flexible membrane.

[0032] (Currently amended) 11. The micro-valve of claim 6 wherein said ~~actuation~~ means for actuation can extend said flexible membrane in a manner proportional to an amount of energy supplied to said ~~actuation~~ means for actuation.

[0033] (Original) 12. The micro-valve of claim 6 wherein said cantilever element contains a compliant element attached onto a portion covering said inlet port.

[0034] (Currently amended) 13. The micro-valve of claim 12 wherein said compliant element comprises at least a portion of PTFE ~~like~~ material.

[0035] (Withdrawn)14. A mass flow controller comprising:

one or more normally closed micro-valves with pedestal and stiffening means;

one or more normally open micro-valves;

one or more flow restrictors;

one or more micro-machined pressure sensors; and

one or more temperature sensors.

[0036] (Withdrawn)15. A pressure controller comprising:

one or more normally closed micro-valves with pedestal and stiffening means;

one or more normally open micro-valves;

one or more flow restrictors;

one or more micro-machined pressure sensors; and

one or more temperature sensors.

[0037] (Currently amended) 16. A micro-valve, comprising:

~~an actuation~~ means for actuation attached to a flexible membrane;

~~said~~ flexible membrane attached to a cantilever element through first pedestal;

~~said~~ cantilever element normally closed over an inlet port;

~~said~~ inlet port in fluid communication with at least one outlet port; and

~~said cantilever element having~~ a second pedestal proximate to said first pedestal, wherein said second pedestal is ~~not~~ attached to ~~said~~ the ~~flexible membrane~~ cantilever element such that the flexible membrane is prevented from substantially flexing in the normally closed condition.